CHAPTER 4. RELATIVE DATING

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This chapter describes the rationale and methodology for dividing the burial population into temporal groupings. It is emphasized that the chronological sequence developed here is a relative one, the dates assigned to each grouping approximate. Burials are assigned to broad temporal groups on the basis of 1) location and stratigraphy relative to non-burial features at the site; 2) artifacts found in direct association with the deceased or in the grave fill; 3) coffin type; and 4) stratigraphic relationships to other burials. In many cases, the several parameters support each other, strengthening the assignments, while in other instances evidence is ambiguous.

4.A. Site features relevant for chronology

Non-burial physical features within the excavated site that are relevant for understanding the cemetery's use over time include:

- the remains of fences that once crossed the site from southwest to northeast along the boundary between the Van Borsum Patent and the Calk Hook Farm (see Chapters 2 and 3);
- ditches found in Lot 12 that trend in the same direction as the fence;
- the scatter of animal bone and cattle horn core fragments that may represent waste dumping (possibly from tanneries) over a portion of the north part of the excavation site;
- the stoneware waste dump associated with potteries that stood on and/or adjacent to the cemetery.

<u>The fence lines</u>

Historic maps from 1754 and 1767 depict lines running diagonally from the southwest starting at Broadway to northeast across the area of the cemetery, along or very near the alignment of the Van Borsum patent's northern boundary as it would be established in the 1780s - 90s (see Figures 2.13 and 2.15). On the 1754 Maerschalk map (see Figures 2.10 and 3.6), the line is dashed and the "Negros Burial Ground" is clearly labeled to its south. The fact that the mapmaker depicted a line suggests, at least, that the boundary somehow was physically marked on the landscape. There may have been a fence dividing the Calk Hook Farm from the burial ground at the time, or perhaps a path ran along the boundary,

leading from the structure depicted on Broadway eastward to the "Pot Baker" near the Little Collect Pond. On the Ratzer plan of 1767 (see Figures 2.11, 3.7, and 4.1), a similarly-placed line runs along the south side of three buildings: the one on Broadway now shown with a second structure to its east and the presumed pottery building further east, now shown within a rectangular lot (which itself may have been enclosed by a fence). Again, the line extending east from Broadway may represent a fence, dividing properties on the Calk Hook Farm (some of which was developed and had presumably been leased) from land to the south that is depicted as undeveloped (the cemetery).

Further evidence for the existence of a fence in the 1760s comes from court records of 1812-13 relating to the ownership of the former cemetery. The heirs to the Van Borsum patent had the land surveyed in 1784, but arguments arose as to the legality of possession of certain parcels during the period following the War of Independence. Proceedings included testimony of a number of witnesses as to the boundaries of the burial ground or patent, and tenancy during the period from the mid 18th century through the 1790s. The summary of the case (Johnson 1853-59(10):355) reads in part:

> [The plaintiffs] showed that in May 1768, J. Teller, their ancestor, entered into possession of a house which he had built two or three years before on the negroe's burying ground, and which had, previously to his entrance, been occupied by his tenant. *That he had a fence enclosing the burying ground, and claimed it as his property, and pastured it, and kept the key of the gate leading to the ground, and took payment for the use of the ground*, and that it was known and called by the name of his land and fence. That he continued in possession until his death in June, 1775, and his family continued in possession afterwards, and until… the invasion of New-York in 1776; and that then the family left the city and retired into the country; and the British army took possession of the house and lot, and during the course of the war, and *while under the dominion of the British, the house and fences were destroyed* [emphasis added].

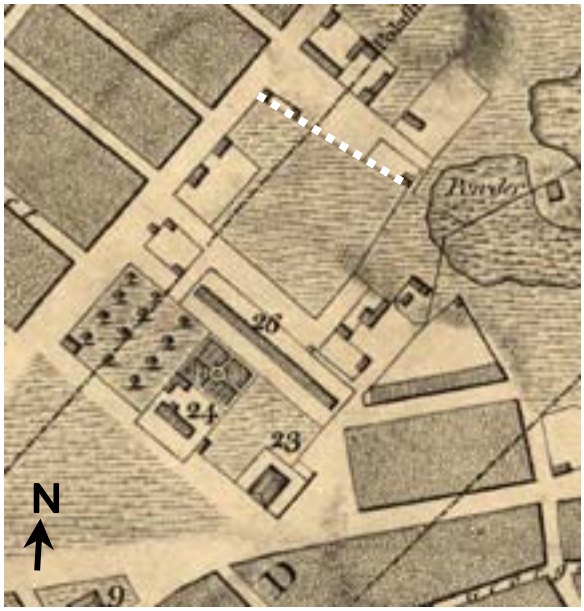

Figure 4.1.
1767 Ratzer Plan (see Figures 2.11 and 3. 7) showing a possible fence along the north side of the cemetery (dashed white).

It is possible the Ratzer Plan depicts the fence that Teller had erected along the north side of the cemetery. It is doubtful the "Teller-phase" (circa 1765 to circa 1776) burial ground was fully enclosed; the Broadway lots and the northern boundary may have been fenced. Since the palisade, which once ran along the top of the rise on the south side of the burial ground, was no longer in place at the time of the Ratzer Plan, it is possible the cemetery

had spread southward again. We can only speculate on the placement of a gate – Broadway seems the most likely location, though access from behind the barracks or the through the potteries may have been possible.

Archaeological evidence for fence alignments takes the form of filled-in post holes. A series of these features was recorded within the excavated site, roughly along the alignment of the patent boundary (Figure 4.2). The irregularity in the pattern of recorded post holes, as well as the variation in profile among those that were excavated, suggests that more than one fence is represented.

One fence iteration may date to the period 1787 to circa 1800, when the building lots on Duane (then Anthony) Street were initially laid out and developed, as discussed in Chapter 3. If the 1787 partition of the Calk Hook lots on Block 154 was physically marked out in some way, with a fence or even just with posts, burials in this area would have been discouraged or prohibited. Lots 12 through 16 were initially sold off with rear property lines that ran diagonally along the "Negroes Burying Ground" boundary (as shown in Figure 2.13). From Lot 17 eastward, however, properties were consolidated with the triangular "gore" of ground to their rears before being sold as building lots, so there may not have been a 1787 fence behind these properties. It is also possible that a fence was put up only as construction actually began on the lots, which was not until 1794.

Moving back in time, the evidence cited above suggests that John Teller constructed a fence in 1765 or 1768. An earlier fence, the one possibly depicted on the 1754 map (Figures 2.10 and 3.6), might have been taken down sometime before Teller took possession. It is also possible John Teller's fence was already partially in place when he came to live on the property, erected by a previous Van Borsum claimant or by the Rutgers to delimit their property to its north.

Finally, it is possible there was fence along the patent boundary earlier in the 18th century, though none is depicted on any map. In 1723 Jacobus Kip, one of the heirs to the Van Borsum patent, petitioned the Common Council to assist him in surveying the property (MCC 1675-1776(3):335). It is at least possible that he was successful in having the bounds of "his" land surveyed, and erected a fence to separate it from the Calk Hook Farm.

There is little doubt that the northern portion of the excavated cemetery was used differently than the portion south of the fence line. Interments in the northern area are sparse compared to the southern area, where intensive use and re-use resulted in a dense concentration of graves (see Figure 1.7). Other distinctions of the northern area include a higher frequency of domestic refuse in the soil matrix, evidence for a higher frequency of weedy plants, a more regular and more southerly orientation of burials, and the presence of most of the site's coffin-less graves.

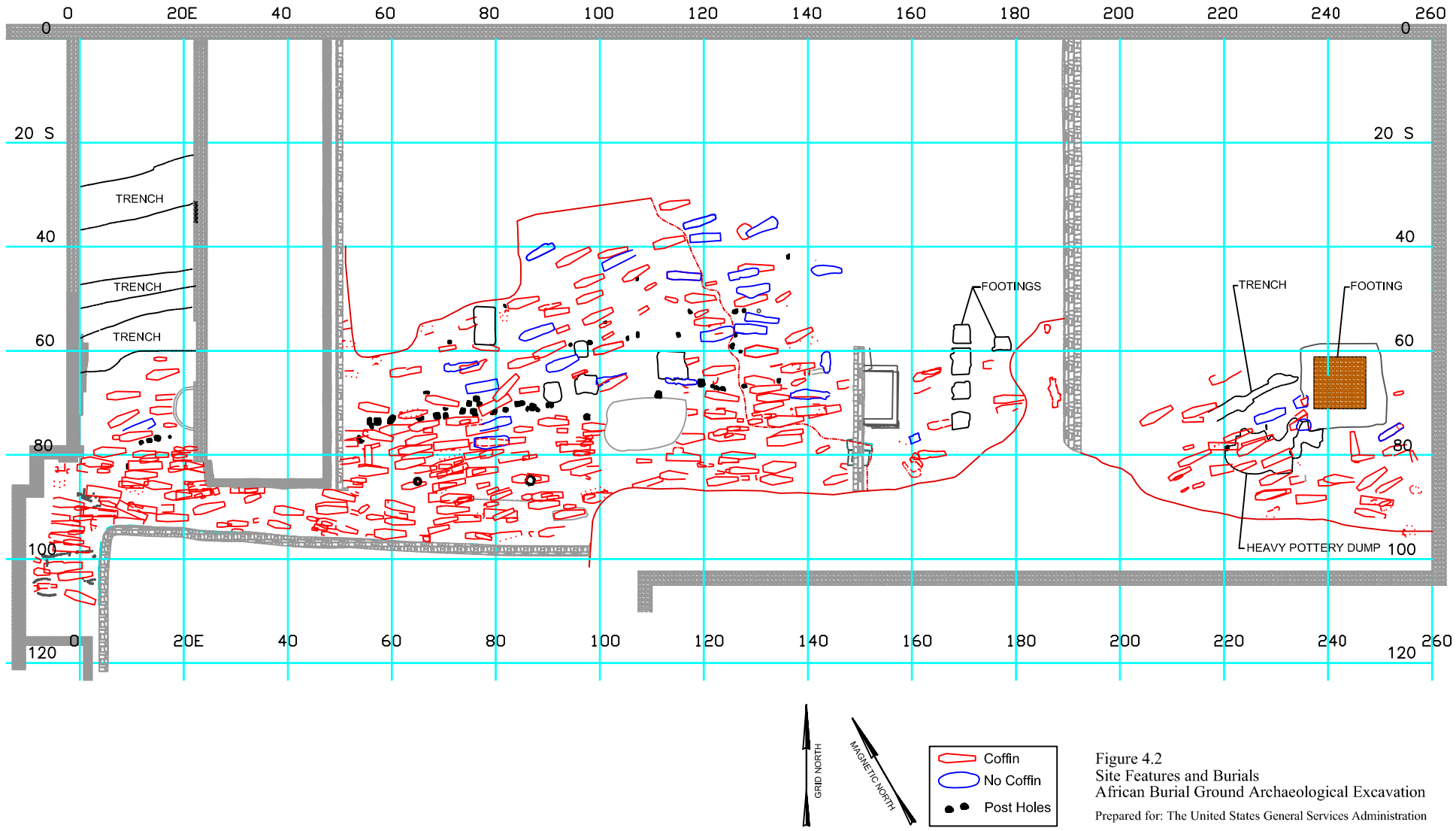

Figure 4.2
Site Features and Burials
African Burial Ground Archaeological Excavation

Prepared for: The United States General Services Administration

The domestic refuse that found its way into northern grave shafts includes ceramics that were common from the 17th century on, suggesting the northern area was used more than the south for scattered refuse disposal. There is also a slightly higher incidence of weedy taxa—aster relatives, goosefoot relatives, and chicory relatives—from analyzed burials in the northern portion of the excavated site (see Appendix G). There is no similar increase in ragweed-type, suggesting that the increases in the other weedy types were not caused by cultivation or continuous soil disturbance. Non-cultivated plants related to asters, goosefoot, and chicory are waste ground plants and may reflect the use of landfill containing these plants (see Chapter 3 on the filling of the Calk Hook lots) or perhaps the neglect of this property beginning with the British occupation.

Divergent non-burial land use aside, the graves themselves are distinct north of the fence line. The scarcity of burials in the northern area allows regularities in the horizontal placement of graves to emerge, so that it is possible to discern rows oriented roughly north-south, probably along contours in the hillside. In addition, at least in the western half of the northern area, graves are angled fairly uniformly south of grid west; burial orientation in the area south of the post-hole alignment is much more variable (see Chapter 5.B for a discussion of burial orientation). Finally, 21 graves without coffins were located clearly to the north of the fence line, out of the 32 coffin-less graves at the site (see Figure 4.2). Put another way, 33% of the burials that were clearly to the north of the line were without coffins, compared to only 4% of those that were clearly south of the line.

If we thus accept that the northern area represents a distinct pattern of use, the question is raised: how were the burials to the north of the post-hole alignment related temporally to fences? Were they interred:

1) before any fence was built, in which case interments were made here for a brief time (given their relative sparsity) early on and subsequently were restricted to the area of the Van Borsum patent to the south;

2) prior to the Teller phase, but while an earlier fence (possibly as early as 1723, and depicted in 1755) was standing, and thus deliberately outside the main cemetery;

3) during Teller's tenure, and thus deliberately outside the gated cemetery for which a fee was charged (circa 1766 through 1776); or

4) after the British destroyed the fence (i.e., during the occupation and after the war, 1776 through the development of the lots and the effective closing of the African Burial Ground?

Artifact analysis, discussed below, indicates that *at least some of the northern burials post-date 1760*. Since the low density of burials points to a limited period of use for the northern area, it is most likely datable to either the Teller phase or the post-1776 phase, or possibly to both. We believe the post-1776 hypothesis is best supported by the evidence, as discussed in Section 4.E and in Chapter 9.

The ditches

Physical boundaries may also be created by ditches. There were three southwest-to-northwest trending ditches recorded archaeologically within Lot 12 (Figure 4.2). According to Cheek (2003:Chapter 4) the fill in the ditches has been dated: the two northernmost contained material from the 1760s and later, and the southern one had artifact types from the 1780s and later. Cheek mentions several possible functions for the trenches, from drainage features, to dumping features, to boundary ditches or fence-post trenches. The northern ditch feature was some 9 to 10 feet wide, the middle one 3 to 4 feet wide, and each was 2½ to 3 feet deep. In cross-section, the middle ditch had a straight northern side, such as would be found in a "ha-ha," a landscape feature meant to keep animals out of gardens. The southernmost ditch was 7 to 7½ feet wide and shallow, just 1½ to 2 feet deep, and it appears to have been open for a longer period of time than the others based on its fill layers.

If one or more of the ditches functioned as a cemetery boundary, this would mean that, during the period when the interments located northward of the fence line were being conducted, either the cemetery's users or its putative property owners saw fit to mark its extent, or perhaps to protect it from grazing animals. No burials were located to the north of the southernmost trench within Lot 12. However, the alignment of this trench, if projected northeastward beyond Lot 12, falls within areas of the site that were not excavated, so it is not possible to determine whether any graves were located outside it.[1] As Cheek points out, the southernmost trench feature is the most likely candidate for a cemetery boundary. It is doubtful any of the ditches represents an early, pre-fence boundary, since there is no evidence that early burials extend this far north (see further discussion below).

Another possibility is that the trenches mark edges of or beds of roadways or paths that once led from Broadway eastward to the pottery kiln(s) located near the Little Collect Pond (see maps in Chapter 2).

Animal bone dumping

The frequency of animal bone and horn in grave shafts and in other excavated features (for the latter see Cheek 2003) has been plotted over space, and it seems clear that within one area of the site, between grid coordinates 135E and 195E to the north of the fence line, dumping of animal bone occurred at some period (Figure 4.3). The faunal remains in the dump include high relative frequencies of horn, hooves, etc., suggesting that this sub-area was used for waste from tannery operations (Appendix E). However, within this sub-area there are some interspersed graves with little or no animal bone.

It is possible the dumping area was very irregular, so that its edge might fall between adjacent graves. But another reasonable explanation for the pattern of presence-absence is that some of the burials here pre-dated the bone dump, while others were dug into it,

[1] Cheek (2003:Chapter 4) suggests that there were burials north of the alignment, but this is not apparent from the site mapping.

with the animal bones then back-filled into their grave shafts. For this small part of the site, then, it may be possible to date graves relative to one another according to the presence or absence of animal remains. If the dump represents a single event or a brief period of time, the interval of time between burials with and without bone may be small. The burials within the dump will be discussed further in Chapter 9.

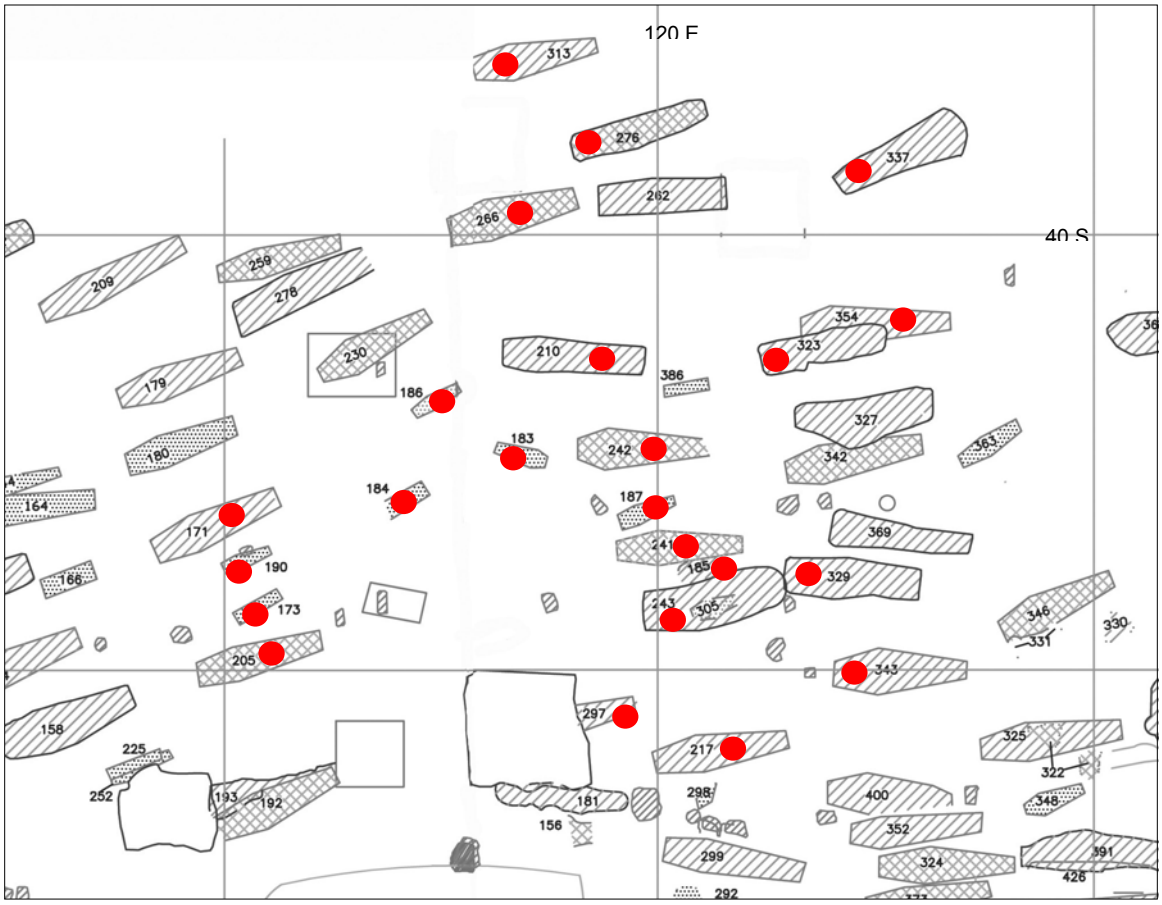

Figure 4.3.
Burials in the vicinity of the tannery dump in the northern part of the excavated site. Burials with significant cow hoof, horn, and bone material in the grave shaft are indicated with large dots.

Pottery waste dumping

Stoneware pottery manufacturers were located immediately adjacent to the excavated portion of the cemetery from the1730s on, and for at least part of the period these industries used the area of the cemetery for dumping kiln waste (broken stoneware vessels, clay waste, and kiln furniture—see Appendix F). The ceramic material would have lain on the surface of the ground or in shallow pits. When graves were dug in these locations, the sherds were back-filled into the graves. Thus we hypothesize that in the areas where ceramics were ubiquitous (i.e., the dump areas), any grave shaft that did not contain these materials probably pre-dated the dump. In addition to the stoneware

operations, earthenware was being produced by the Campbell pottery, located just across Broadway from Block 184, during the 18th century. Redware waste sherds from this pottery were also scattered over the ground, though not concentrated in defined dumping areas.

Kiln waste was concentrated in the southeastern area of the excavated cemetery. The material may have been from either or both of the kilns that stood nearby (one to the southeast, and one closer by, near Duane Street). It should be remembered that the northeastern part of Block 154 was never fully excavated and may have contained pottery middens as well. A particularly dense dump, which appears to have been on the surface rather than in an excavated pit, was designated Feature 139 during fieldwork. It covered an irregular area that overlapped with several burials. A scatter of stoneware waste sherds and discarded kiln furniture came to be spread over a much larger area, however. Such material was recovered from grave shafts at the far west end of the site, though concentrations drop off markedly to the west of the 200E grid line. (It is likely at least some of the stoneware sherds recovered were from vessels that were in use, rather than kiln wasters.)

The commencement of the stoneware operation on "Pot Bakers Hill" (in the southeast part of the Van Borsum patent and to the southeast of the excavated site) can be placed as early as 1728, when it appeared on the Lyne survey (Figures 2.6 and 2.7). William Crolius, the presumed proprietor of the works, was registered in the city as a potter in 1728, though he had immigrated here by 1718 (see Janowitz and Cheek 2003). The second, northern kiln, associated with Crolius and/or Remmey, may date to somewhat later, probably circa 1740 (it was depicted on the Grim map, which was drawn in 1804 but represents 1742-44, and appeared on contemporary maps by the 1750s).

We do not know, however, when the potters dumped kiln waste material in the archaeologically excavated portion of the African Burial Ground. Analysis of the ceramic materials themselves suggests that very few kiln firings, perhaps even just one, are represented by the most concentrated dump (Feature 139; see Appendix F). This analysis also indicates that the wares here are dissimilar to those from other New York sites that date to after the Revolution. We consider it likely the dumping would have stopped during the period when Teller fenced the land. Therefore, we date the stoneware kiln dump to somewhere in the period from circa 1728 to circa 1765. Some burials in the southeast sub-area of the excavated cemetery are clearly datable to after the dumping began, since they were placed in the middle of the midden and their shafts were literally filled with sherds and kiln furniture. Others, with smaller amounts of stoneware waste in the shaft fill, were located outside the edge of the dense midden. In some cases, burials with little or no ceramic waste are thought to have been interred prior to the time of the heavy dumping.

The Campbell earthenware manufactory on Broadway, which produced redware vessels and pan tiles (roofing tiles), probably commenced operation in the late 1750s (John Campbell first appears in the records as a potter at age twenty in 1759; see Ketchum 1987:42-43). Frequencies of redwares in grave shafts are low, however, and no localized

dump area similar to those for stoneware or animal waste can be mapped within the excavated cemetery.[2] Dumping seems to have occurred within Lot 12 to the north of the graveyard, and the only burial with a high frequency of redware, Burial 313, is the northernmost excavated burial at the site. This burial can confidently be placed in time after the beginning of redware manufacture. Otherwise, only the presence of redware kiln furniture, pantiles, or kiln wasters can be used to place burials in the second half of the 18th century, and there are very few with such items in their shafts: Burials 185, 186, 213, 217, 242, 266, 276, 323, and 354.[3] The absence of redware kiln items cannot be used as a *terminus ante quem* (date *before which* deposition must have occurred) to place burials in the first half of the century, since overall frequency is so low.

4.B. Artifact dating

Where possible, artifacts found in direct association with skeletal remains or coffins as well as artifacts from the grave shaft fill have been used to assign a *terminus post quem* (date *after which* deposition must have occurred) for a burial. A grave that, based on superposition, clearly post-dated a burial with dated artifacts was given that burial's TPQ (unless it had a later one of its own). It should also be remembered that if an interment cut into an earlier grave, an item that was recovered along with the later burial might actually have come from the earlier grave shaft. Since there is no way of determining when such mixing occurred, however, such items can only provide a TPQ for the later burial. Most of the graves that were disturbed through construction, either historically or recently, are not assigned TPQs due to the likely presence of intrusive material. Artifact-based TPQs are listed in Table 4.1.

Stoneware and redware kiln furniture have not been used as datable types in this analysis; the wares, which in themselves have wide time ranges, have instead been used as time-markers for the dumping from local potteries, which we choose to keep as a separate variable (see above).

Since so many burials had no datable items at all, and most datable artifacts from the African Burial Ground have very broad manufacture dates, only a few burials can be assigned on this basis alone to time periods. However, when combined with data on coffin shape, stratigraphic sequence, and relationships to other site features, the artifacts are helpful in developing the chronology.

[2] A non-burial feature in Lot 12, dated to the period 1760 to 1780, was filled with redware kiln debris (Cheek 2003).
[3] Redware sherds identified as fragments of dishes, pots or bowls that may represent domestic refuse rather than kiln waste are *not* taken as proof the pottery was in operation at the time of their deposition.

Table 4.1.
Artifact-based Termini Post Quem

TPQ	Artifact	Burials
1640	plain white delft	191
1660	Chinese export	192, 402
1670	slipware	9, 50, 57, 60, 67, 171, 194, 245, 414
1680	light blue painted delft	37, 63, 72, 158, 180
1680	white salt-glaze	25, 35, 55, 205, 268, 276, 278, 286, 419
1727	coin	214, 259
1740	agate ware	4A
1740	pipe	217
1740	Whieldon ware	297
1744	scratch blue	135, 328, 379
1750	Fazackerly palette delft	5, 30
1760	creamware	40, 172, 196, 224, 228, 236, 242, 266, 313, 323, 333, 337, 354, 362, 413
c. 1760	iron tacks	101, 176
c. 1770	buttons	6
1780	pearlware	1, 12, 14, 204, 207, 208, 241, 257

Many grave shafts contained artifacts that began to be manufactured in the 17th century (e.g., slipware or white delft), and are devoid of items that are clearly of later manufacture. However, over the southern part of the excavated cemetery, the distribution of artifacts overall was very sparse, and it is likely the absence of later artifacts reflects a relatively "clean" surface. When dealing with domestic sites, the absence of artifact types that were ubiquitous can be used to assign *termini ante quem* (dates before which depositional events occurred, or in other words *latest* likely dates) for archaeological deposits. However, artifact types, especially ceramics, that are normally ubiquitous on sites with domestic components, cannot be used in this way at the African Burial Ground. Though dwellings stood adjacent to the cemetery during the 18th century, associated domestic refuse may not have been quickly scattered over the area of the excavated interments. Thus the absence of creamware, a type imported in quantity in the 1760s, cannot be taken to mean that a burial pre-dated that decade (though the presence of creamware, of course, indicates the burial cannot have been made prior to its importation). Nor can the presence of creamware and the absence of pearlware bracket a burial within the 1760s-70s period, because there is no reason to expect pieces of ceramic to be present in the first place. If crockery were being deliberately placed on graves surfaces, as has been documented at African American cemeteries elsewhere, the presence/absence of datable types might be useful for dating. There is no evidence from

the African Burial Ground for this practice, since over most of the site the original surface was not present or had been mechanically stripped (for a possible instance of crockery placed on a coffin lid, see Chapter 14). The items providing the early TPQs listed in Table 4.1, for the most part ceramic types, all may have been in use well into the 18th century, and in some cases were still being manufactured. The fact that the graves in which they were found contained no later-manufactured items does not mean that they were early interments, though it does raise that possibility. In fact, however, graves believed to be the earliest in our sample based on other criteria typically contained *no* datable artifacts at all in the grave fill, which suggests to us that the ground was "clean" in the early years, with sparse accumulation of refuse material over time. It should also be noted that there were sixteen burials that we believe to be later than 1776 (based on other criteria) whose *only* grave-shaft artifacts were of types manufactured beginning between 1640 and 1744.

Items placed directly with the deceased (as opposed to being mixed into the shaft fill) also cannot be used to assign any date other than the *terminus post quem*. In the case of the African Burial Ground, items placed with or worn by the deceased included such things as beads datable only broadly to the 17th and 18th centuries, numerous buttons with broad manufacture dates, a pipe datable only broadly to the 18th century, and so forth. Fortunately, some items (buttons and coins) do have beginning manufacture dates that fall within the 18th century and these, along with similarly datable grave-shaft material, can be used to place some burials more precisely in time.

4.C. Burial stratigraphy and spatial patterning

Superimposed burials provide an opportunity to sequence interments from earlier to later, even without being able to date them. All burials that overlapped with others were organized into "series," arbitrarily numbered groups where stratigraphic relationships could be examined. It is important to emphasize that the series we used for relative sequencing do *not* necessarily or even typically reflect *clustered* or *related* burials, which terms refer to burials that may have been intentionally placed in relation to each other. Many of the series included only a pair of overlapping burials, while a few, in the more densely occupied areas of the cemetery, comprised 20 or more graves. The term "isolates" was used to refer to burials that do not overlap with any others, and again, it is emphasized that a stratigraphically isolated burial was not necessarily spatially or socially isolated from others.

The relative positioning of overlapping burials within a series was reconstructed through analysis of field notes, drawings, site maps, and photographs. All recorded depths had to be converted to absolute elevations. Sometimes the order of interment was apparent upon first examination, especially when just two or three were involved, but in the more complex cases the sequence often had to be derived from multiple lines of evidence. While individual burial drawings are in the main excellent, stratigraphic relationships were only occasionally shown, with each burial recorded as though in isolation. A series of field maps, created during the excavations by tracing or transposing burial or coffin

drawings cumulatively onto larger sheets (at a scale of 1 inch to 1 foot), was very helpful but not always conclusive as to the sequence of superposition of the most crowded burials. There are also a few maps drawn prior to excavation of graves within excavation shelters, which sometimes clarify relationships, but these exist only for a few locations. The field notes, which were recorded burial by burial, rarely address directly issues of stratigraphic relationships to other burials, and the descriptions of grave-shaft and overlying, underlying, and surrounding soils are somewhat sporadic. As is always the case when analyzing a site subsequent to the actual fieldwork, much time and effort had to be spent reconstructing the archaeological excavation before the virtual reconstruction of the original site could begin.

Reconstructed stratigraphic relationships were diagramed for ease of analysis. Examples are reproduced in Figure 4.4, and the full set will be found in Appendix I, along with a list of the burials in each series analyzed. Prose descriptions of the stratigraphic relationships of each burial are in Volumes 2 and 3 of this report.

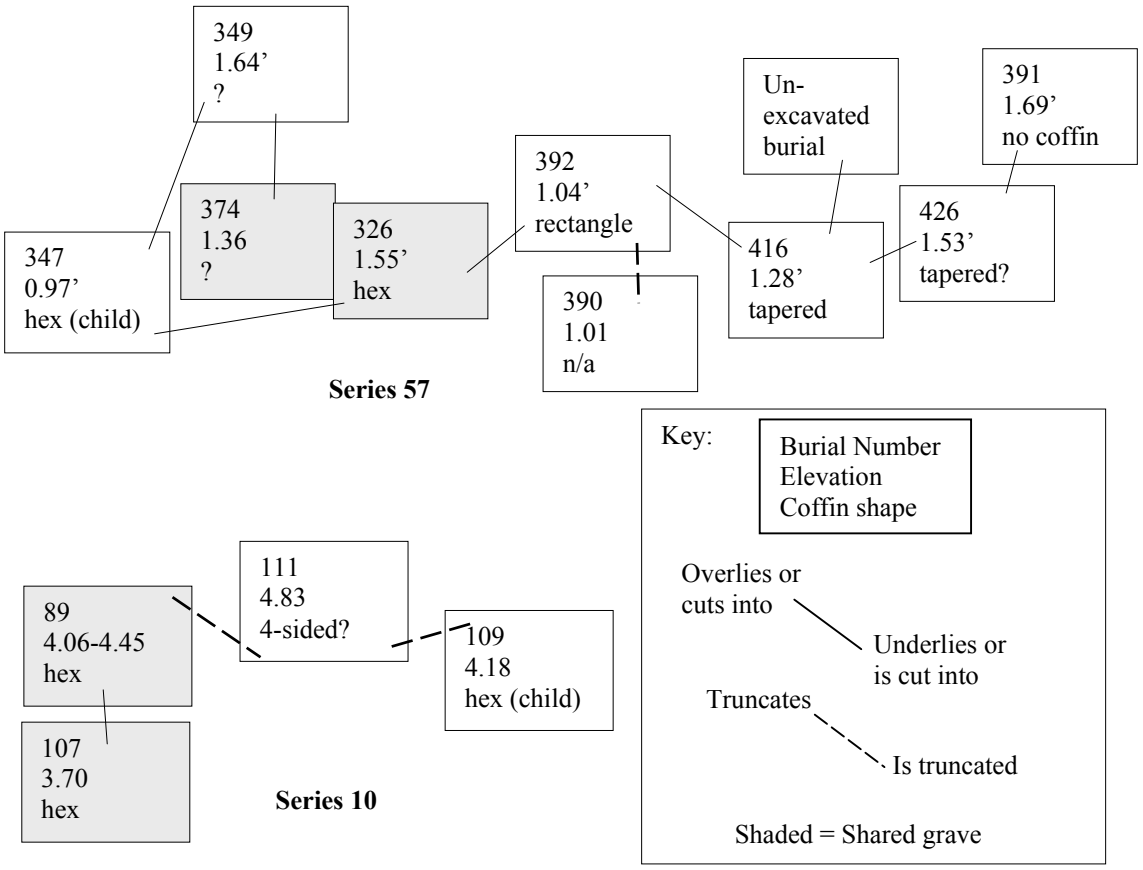

Figure 4.4.
Examples of diagramed stratigraphic series. The positions of the rectangles represent the relative positions of the burials (to the extent possible in a two-dimensional diagram).

The "earlier than" / "later than" order of interment arrived at through the stratigraphic and site map analysis does not, of course, provide information as to the span of time involved overall or the intervening time between individual burials, much less as to the absolute date of any interment. Inferences have been made for specific types of stratigraphic sequences, however: In cases where a later burial actually *truncated* an earlier one -- that is, destroyed all or part of the prior burial – it is hypothesized that a relatively lengthy period intervened between the two. This is predicated on the assumption that the later interment in these cases showed a disregard for the earlier, either because the gravediggers had no knowledge of, or no concern for the preservation of, an existing grave. The truncation of one grave by another is not, in fact, all that common at the African Burial Ground, even though there are locations where burials are quite densely crowded.

The task of placing burials in chronological groups is complicated by a practice we believe to have been common at the cemetery, the placement of young children within, above, or in close proximity to adult graves (see discussion in Chapter 5). We recognize our own bias toward assigning child burials to the same temporal groups as the adults, but do not have a means to straightforwardly correct it.[4]

There is one group of cases where the elapsed time between a later disturbance and a burial or between superimposed burials can be better estimated. The degree of disarticulation of the disturbed burial can suggest how long it was in the ground before it was displaced. Sometimes it is clear that the remains were fully disarticulated prior to the disturbance, since bones were either placed in a neat pile or scattered. In these cases the minimum length of time necessary for full fleshy decomposition provides a minimum interval between events. This interval may have been approximately 2-3 years, though coffins, shrouds, and clothing may have reduced the decomposition rate somewhat (Rodriguez 1997:460-61).[5]

In other cases, the span of time encompassed by a stratigraphic sequence can be deduced only with reference to other factors, such as spatial considerations (e.g., apparent groups or rows) or to independent variables such as TPQs or relationships to other site features. Likewise, isolates can be temporally related to other burials only by reference to such variables. In this type of analysis, the danger of tautology must always be avoided: another variable can provide a hypothesized date range for one or more of the members of a stratigraphic series, but *only* if stratigraphic position has not been used to assign a date range to the variable. However, if stratigraphic position tends to co-vary with another trait, such as coffin shape or the nature of grave fill contents, then chronological distinctions are strengthened, and periodization becomes more feasible.

[4] This bias is apparent when we look at the child/adult ratios for each temporal group (see Chapter 5).

[5] Sometimes a later action displaced bones from an earlier burial, but *some* of the earlier bones remained articulated. Research at ossuary sites has lead to the development of a sequence for skeletal element disarticulation, which helps us to recognize that remains that were displaced from original burial position might display partial articulation (Ubalaker 1974:28-31).

One factor that must be examined in relation to stratigraphy and especially to the assignment of isolates to strata is elevation. Site-wide, absolute elevation itself cannot be used to determine earlier and later burials. This is because the original ground surface of the cemetery sloped downward from the west, near Broadway, to the east, near the Collect Pond (see Chapter 3). Thus, most of the westernmost burials were originally at higher elevations than those in the eastern part of the site. It is only within limited areas that absolute elevation might be a clue as to sequence of interment. However, even this would presume that the ground surface in any given location remained constant over the life of the cemetery. Such a presumption is untenable. In fact, there is evidence that the ground surface in some places eroded away in the interval between interments, while in others it was raised. Given the uneven terrain, it is likely that the hillsides eroded and the flatter areas came to be covered over as the seasons passed. Hence the situation, not infrequent, where a burial has clearly been damaged by a later burial, but the earlier of the two has a higher cranial elevation than the later (for example, Series 10, in Figure 4.4). This means that an isolate burial cannot simply be placed temporally with others nearby that have similar elevations. Instead, its alignment, soil description, grave fill contents, and any other available evidence must be considered. In many cases, it was necessary to simply leave isolates in the default "Middle" Group (see below).

It should also be remembered that the depth below the ground surface of even the uppermost burials cannot be reconstructed in most cases. This is because a ground surface was intact in only one small area of the site, the western end of Republican Alley (see Chapter 3). Thus the depths of grave shafts relative to shifting surfaces cannot be used to gauge the likelihood that interments were from the same period. Where the ground surface was recorded, grave shafts apparently were no more than 2½ to 3 feet deep. It may be possible through further analysis, using this depth as the norm, to postulate changes in the ground surface at various locations in the cemetery where burials overlap.

The inability to use absolute elevation to reconstruct relative chronology does not mean that the use of the higher part of the cemetery and the use of the lower part coincided. In fact one or the other area may have been used first, and there are good historical arguments for either scenario. One or more other time-sensitive variables would have to co-vary with east-west coordinates in order to begin to test which area saw earliest use. No such covariance has been discerned in the data thus far.

4.D. Coffin shape

The African Burial Ground sample includes four-sided tapering, rectangular, and shouldered or "hexagonal"[6] shaped coffins (Figure 4.5), and from the outset we considered the possibility that this variability is temporally diagnostic. The documentary and material record for change over time in coffin shape is confusing, but *in general*, a change from four-sided, tapering coffins to the shouldered variety is supported (Coffins

[6] The term "hexagonal" was used throughout the analysis and in the database, but is perhaps technically a misnomer. The angled shoulder of these coffins was formed by bending a single side board, and can be slight or pronounced. See Chapter 10.

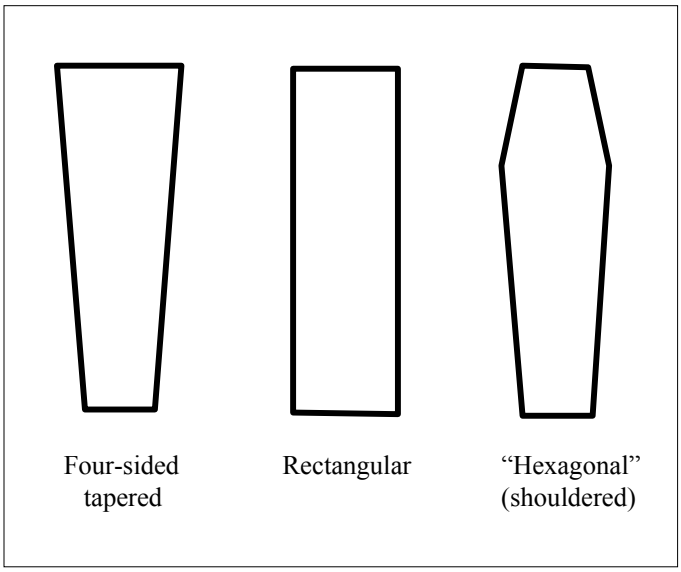

Figure 4.5.
Coffin shapes represented at the African Burial Ground.

are discussed in Chapter 10). The preponderance of stratigraphic relationships at the African Burial Ground point to this sequence. The issue is complicated due to the large number of infants and young children interred here. It is very clear on the basis of burial stratigraphy and other dating factors that many very small coffins were made in the four-sided shapes (tapered or rectangular) throughout the period of the cemetery. Only the "full-sized" coffins were therefore considered candidates for temporal sequencing.

Four-sided, adult coffins at the cemetery were of two types, those that tapered toward the foot and those that were rectangular. Initially, both were grouped together as possible indicators of early burials. Subsequently, stratigraphic and artifact analysis produced contradictory evidence for this, and the rectangular-shaped, full-sized coffin, found in any case in only two burials, is now considered to be non-diagnostic.

There is evidence that four-sided-tapered and hexagonal coffins overlapped in time at the African Burial Ground. However, the tapered coffin type appears to provide the greatest degree of confidence for generating an early analytical cohort (see discussion of the Early Group in section 4.E).

Attempted seriation of coffins based on other characteristics, such as size, material, and construction details, has not been fruitful. None of the basic parameters of variation other than shape appear to be time-sensitive. One *possible* instance of change over time is decreased use of spruce, but the sample number is too small for confidence. See Chapter 10 for detailed data on African Burial Ground coffins.

4.E. Results of analysis: the chronological grouping of burials

The assignment of burials to temporal groups is presented in Figure 4.6 and in tables and figures at the beginning of Chapters 6 through 9. A complete list of burials that includes temporal assignments is in Appendix C; the burial descriptions in Volumes 2 and 3 include the temporal group assignments and the supporting evidence where appropriate. The Early Group and the Late Group are derived based on the analyses described in Sections 4.A through 4.D. The Middle Groups comprise all remaining burials, the majority of those excavated at the African Burial Ground, and within it a Late-Middle component is identified based on stratigraphic relationships and in some cases artifact dating. It is likely the Middle Group overlaps at one end with Early burials, and that the Late-Middle Group overlaps in time with the Late Group. It is emphasized that no burials are dated absolutely. In the following discussion we first address the Late and Early Groups, which are most clearly defined.

The Late Group

The Late Group (114 graves) was first postulated on the basis of burials' spatial and stratigraphic relationship to the post-hole alignment that is believed to represent the Calk Hook Farm/Van Borsum patent boundary. Eight of the northern-area burials have *termini post quem* of circa 1760 (creamware in the shafts), while two have TPQs of circa 1780 (pearlware in the shafts; see Table 4.1). It is posited on the basis of this and spatial patterning (i.e., relatively sparse burial distribution), that this area was in use relatively late in the life of the cemetery. But was it a 30-40-year span encompassing the Teller and post-war periods, or was it a shorter span limited to one or the other period?

Possible evidence for the use of the northern area during the Teller phase, 1765 to 1776, includes the presence here of most of the coffin-less burials. Those who buried their dead north of the fence may have included people unable to pay the "fee" that Teller was supposedly charging, who by extension also may have been unable to afford coffins.

Three kinds of evidence argue against the correlation of burial-without-coffin and Teller's imposed fees. For one thing, there are coffin-less burials in which the deceased were interred with objects of value, suggesting that those without coffins were *not* necessarily the poorest of the cemetery's population. Forty-three burials had items of clothing or jewelry (discounting problematic associations as discussed in Chapters 12 and 13) -- five of these were among the thirty-two coffin-less burials. These five include two with enameled cuff link or button faces and one with a set of matching gilt cuff links. It does not appear likely that extreme impoverishment correlates directly with coffin-less burial, though we note the small numbers in the sample. Second, in at least one case there an apparent row of coffin-less burials (Burials 223, 150, 199 and 211, approximately at grid line 75E) that *spans* the fence post alignment, suggesting that this type of interment was being conducted at a time when the fence was not standing (and thus no fees were being extorted by Teller). Finally, there is the simple fact that *throughout* the cemetery's use most African New Yorkers buried there were very poor, yet their survivors almost always managed to provide a coffin, either through the

Figure 4.6.a
Western Area
African Burial Ground Archaeological Excavation

Prepared for: The United States General Services Administration

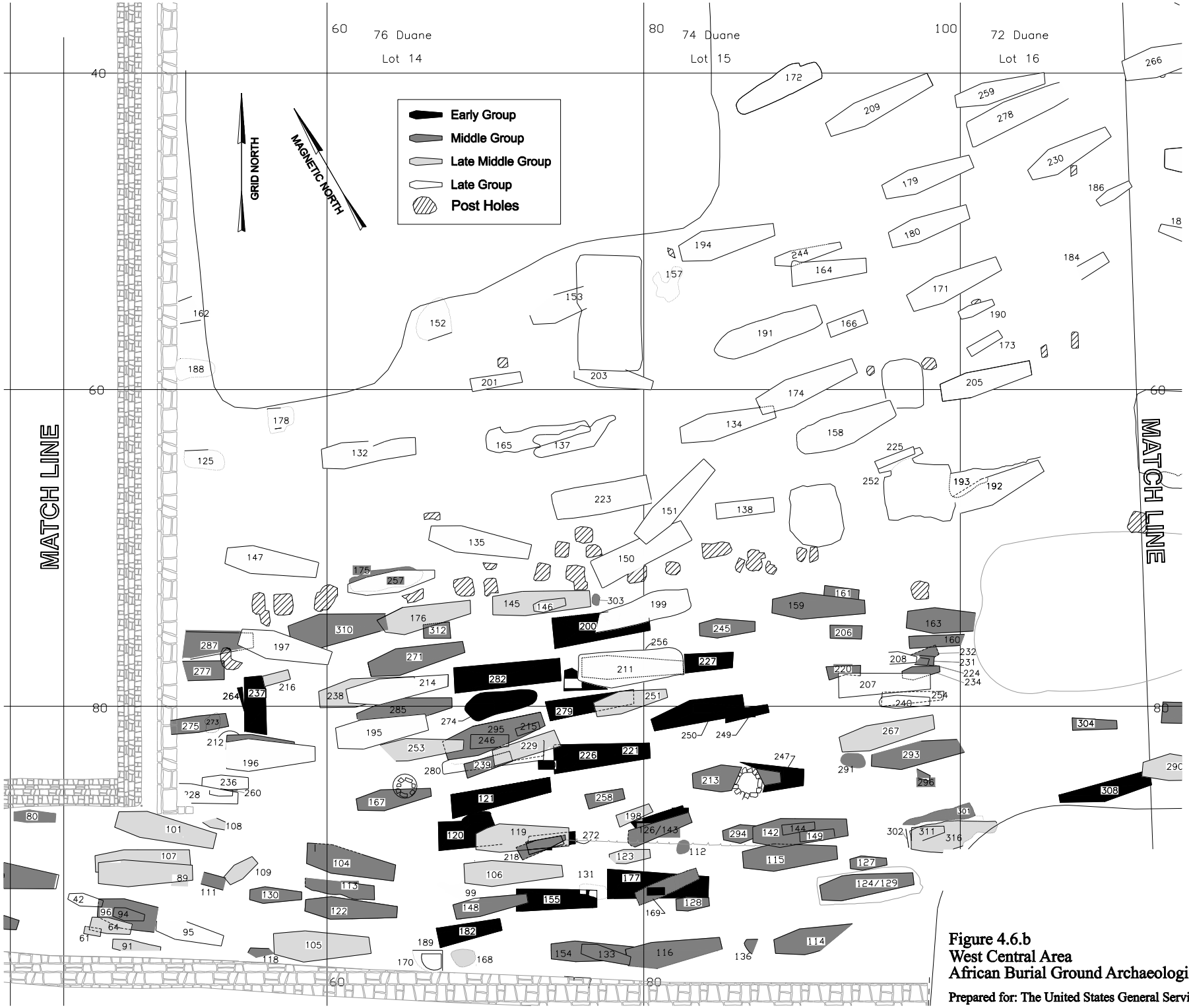

Figure 4.6.b
West Central Area
African Burial Ground Archaeological Excavation

Prepared for: The United States General Services Administration

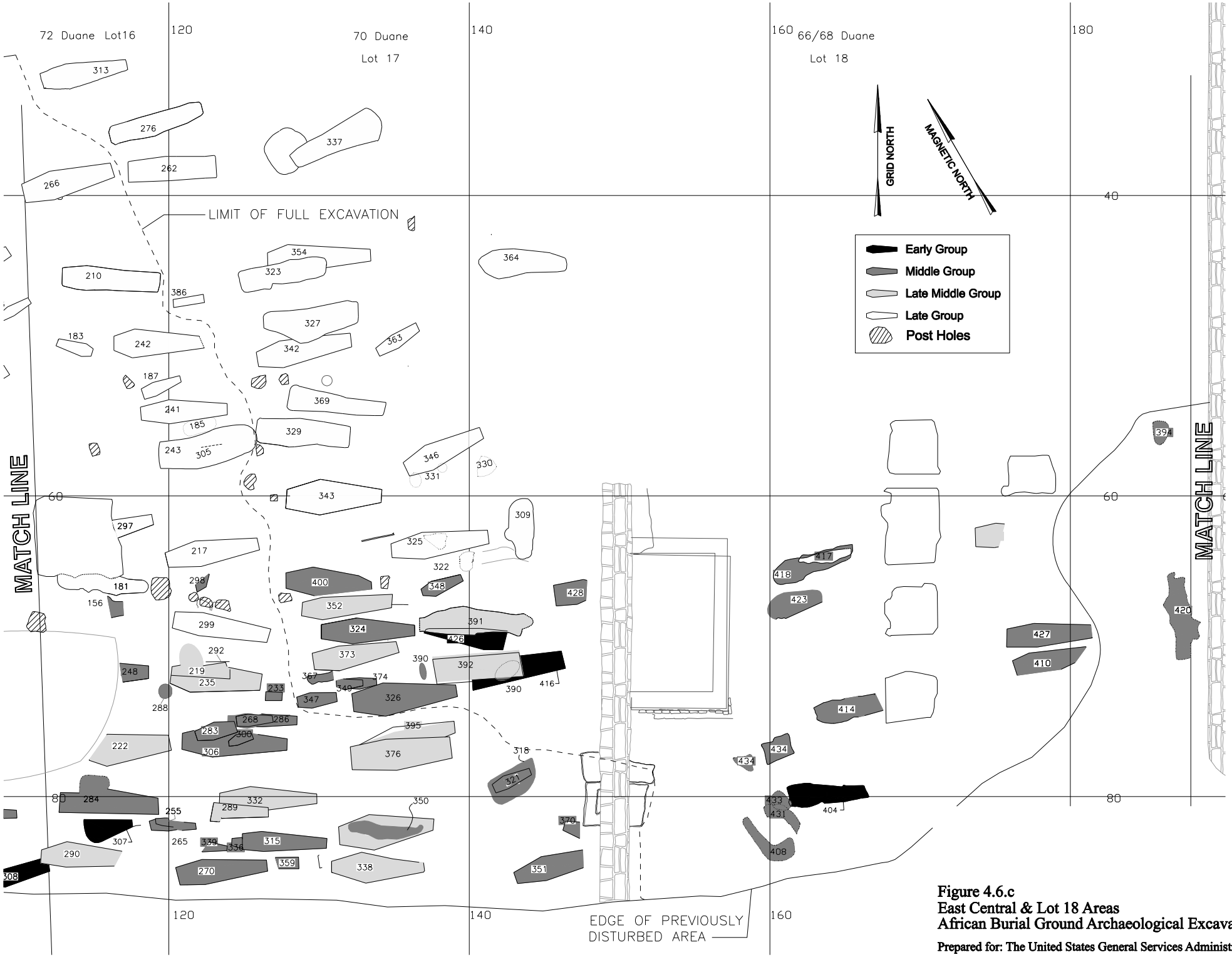

Figure 4.6.c
East Central & Lot 18 Areas
African Burial Ground Archaeological Excavation

Prepared for: The United States General Services Administration

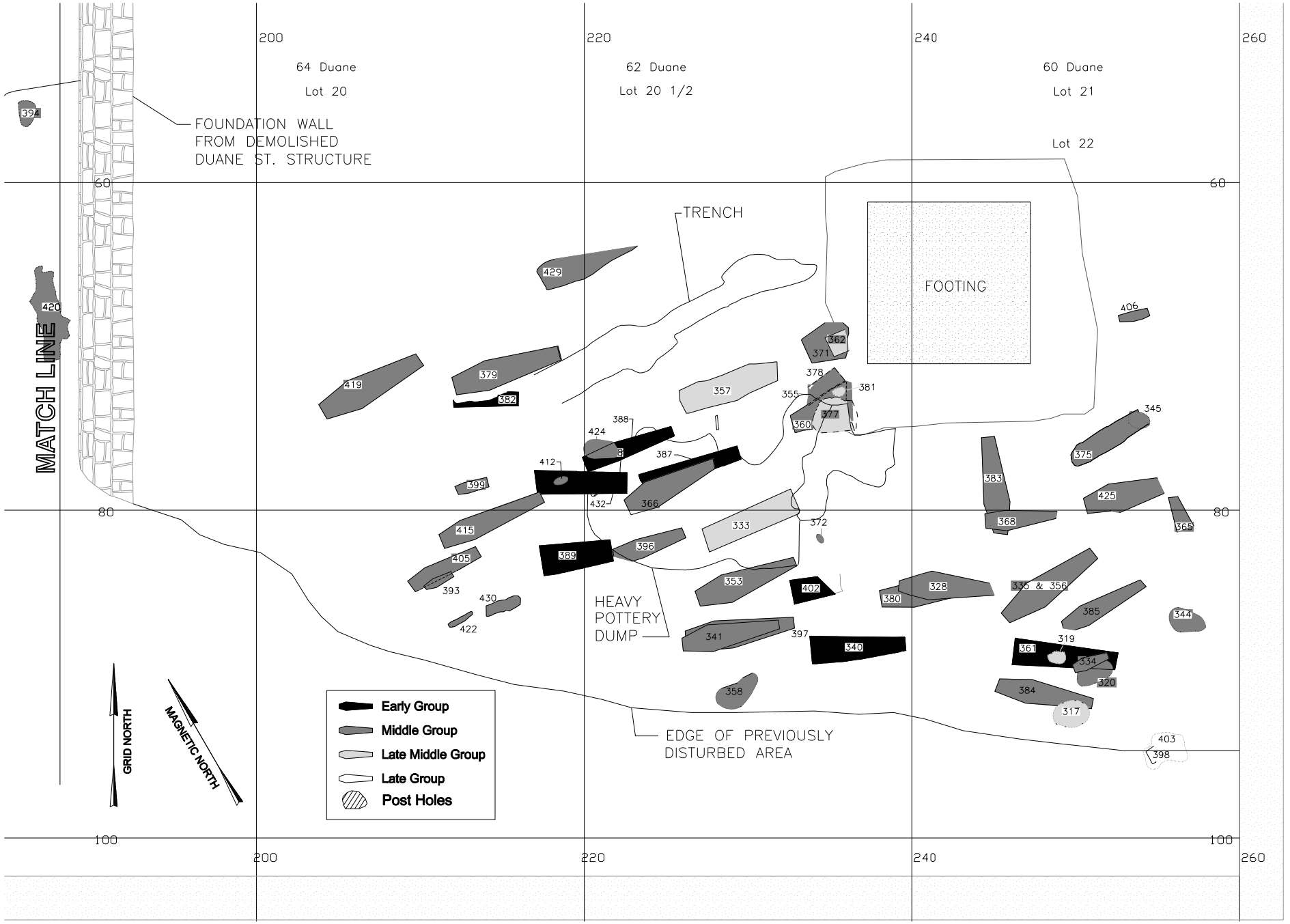

Figure 4.6.d
Eastern Area
African Burial Ground Archaeological Excavation

Prepared for: The United States General Services Administration

household head (the "master" in the parlance of the time) or through contributions from kin and community. The provision of a coffin, we argue, was likely considered one of the very basic components of a proper burial (see Chapters 5 and 10). Why then, would poverty be marked by lack of coffins only during the Teller phase? It is possible, and perhaps likely, that the frequency of coffin-less interments north of the fence line has an explanation other than a purely economic one.

There is some circumstantial historical evidence for the use of the northern area only *after* 1776. Why, we might ask, would the Rutgers/Barclay family (proprietors of the Calk Hook land) allow burials on their property in the 1760s? They had leased out some of this property (apparently to potteries and a potash manufacturer), and structures stood on it adjacent to the burial ground. During the occupation, however, property boundaries were more easily ignored, and proprietors were subject to encroachment with little legal recourse. With the destruction of the fence, the Calk Hook property may have lain open for usurpation by cemetery users. It is possible, too, that British use of the southern part of the cemetery for barracks and other military uses, and for burying its army dead and prisoners (see Chapter 2), effectively "pushed" the African Burial Ground northward. The animal bone dump identified north of the fence also may be evidence that this part of the Calk Hook property was encroached upon during and after the war.

In summary, the burials to the north of the alignment of the patent boundary are assigned to the late cohort within the cemetery population. Though the actual time period – after circa 1765 or after 1776 – is not certain, though there are historical reasons to select the later date. In brief, the presence of most coffin-less burials to the north of the fence line can be linked to its use during the British occupation of New York. Demographic evidence supports this dating, a point taken up in Chapter 9.

In three cases, northern burials were truncated by other interments, and the bones were re-deposited in such a way as to prove that they were completely de-fleshed by the time of the second interment. These cases are Burials 76, 185 and 193. We do not know the precise length of time it would have taken for the bones to be completely disarticulated. All three were without coffins, which may have led to quicker decomposition.[7] Assuming the northern area became available for burials in 1776 and was in use through at least 1787, the interval between superimposed burials could have been a maximum of 11 years. Decomposition may have taken only two to three years, so the assignment of even the disturbed burials to the late group is justified.

It is assumed that burials continued south of the fence line during the time the northern area was used, as there is no evidence (archaeological or historical) to indicate they did not. Those burials to the south of the fence line that have been placed in the Late Group

[7] Burial 185 definitely was interred after the period of animal bone dumping, and there was much animal bone in its shaft fill. The waste material in the soil may have affected taphonomic conditions for Burial 185, causing an even speedier decomposition of the flesh. The presence of tanning materials, such as leather scrap and tree bark, would have increased preservation of flesh, but there is no reason to believe such materials accompanied the animal bones to the dump (Rodriguez 1997:463).

have been assigned on the basis of stratigraphy, spatial alignment, and artifacts. There are a number of burials, notably toward the western end of the excavated site, whose elevations are considerably higher than others in the immediate area. It appears the area saw a last phase of use after earlier graves had been covered over, possibly due to development on Broadway.

As noted, there are some cases where a row of interments appears to span the line of fence posts. Some such rows include burials whose grave shafts cut into postholes and thus clearly post-date at least one fence. Rows, of course, may include both pre-and post-fence burials, but where other factors suggest a burial is relatively late (e.g., it overlay several others), its location in a row with northern ones can support the dating.

The Early Group

We have seen that artifacts can provide dates after which burials must have taken place, but the lack of datable artifacts in most burials makes it impossible to know the earliest possible dates of interment. Analysis of coffin shape, stratigraphy, and relationships to the pottery dump, however, has led to the generation of an early grouping of burials comprising up to 51 graves.

The hypothesis that four-sided coffins at the African Burial Ground were earlier than hexagonal coffins (see Chapter 10) was tested by examining stratigraphic relationships. In 26 cases, graves containing four-sided, adult coffins were overlain or cut into by other graves, and in 10 cases, four-sided coffins were actually thoroughly truncated by later graves. Five burials with four-sided coffins were isolates, and one was an isolate except for a co-interred child burial. Only three graves with four-sided coffins, Burials 207, 392, and possibly 388, overlay other burials.

Burial 207, an adult grave with a tapered coffin, overlay numerous child and infant burials. Cleaning of the cranium of Burial 207 in the laboratory yielded a tiny piece of hand-painted pearlware, datable to the 1780s or later. Based on this sherd, which probably was in the soil matrix at the time of the original interment, Burial 207 appears to be a late interment.[8]

The burials with four-sided coffins were also examined in relation to other site features. *None* appear north of the fence line. Burials with four-sided coffins in the area of the stoneware dump were next examined. The grave shaft of one with a rectangular coffin, Burial 333, contained massive amounts of stoneware waste (from Feature 139) and thus must be placed later in time than the kiln dumping. It also contained a piece of creamware (dating it to after circa 1760). However, other four-sided burials within the

[8] For purposes of the chronological analyses in Chapters 6 through 9, Burial 207 has been placed with the later group. There were disturbances in the immediate area, including above this burial. Because the sherd of pearlware was actually in the cranium, however, it seems prudent to assume it was not intrusive. If we were to consider it as intrusive and place Burial 207 with the Early Group, then all of the underlying subadult interments would also need to be assigned to the early group. This re-assignment would substantively alter the demograhics of the earlier group. See Chapter 6 for further discussion.

vicinity of the dense kiln dump contained only small quantities of ceramic waste material relative to the midden density, and no other temporally diagnostic artifacts. These included Burial 340, an isolate burial with a tapered coffin, which had no stoneware in its grave shaft. The grave was located just to the south of Feature 139, and therefore outside the concentrated dump. However, it seems highly unlikely that *no* sherds would have found their way into the grave shaft if the dump was already in place here when the woman in Burial 340 was interred (shafts of other burials near the edges of the dump contained at least some stone wares).

Burials 387 and 389 had four-sided, tapered coffins and were located beneath burials with hexagonal coffins. They contained some ceramic waste, but no where near as much as their respective overlying burials or the midden itself. The field records are not specific as to where sherds were recovered within a given grave, but there is a possibility that the ceramics in these two burials came from the intruding later graves. Yet another grave with a four-sided, tapered coffin, Burial 388, contained much more kiln waste (over 400 pieces) than did Burials 387 and 389. Though Burial 388 did *not* have a later burial intruding into it, the area surrounding and overlying the grave was disturbed, so the possibility that the ceramics were intrusive cannot be ruled out. If the ceramics in their shafts were not intrusive, these burials suggest that the midden was formed during a time when four-sided, tapered coffins were still in use. In this case the lowered frequencies of stonewares in these graves may be due to the fact that their grave shafts were truncated and thus the sheer amount of fill sampled was greatly reduced, and/or to the fact that they are at the edges of the dense midden feature.

Burial 333 was distinct from all of the other burials with four-sided coffins in the southeast area of the site due to the huge amount of stoneware waste material in its shaft fill (over 3000 pieces) and the *terminus post quem* of circa 1760. Because of this, we considered whether rectangular coffins should be grouped together with tapered ones or considered separately. One other clearly rectangular adult coffin, that of Burial 392, appears to be a later burial, and in fact overlay a burial with a tapering coffin. Burial 432, also located in the southeastern part of the excavation (not far from Burial 333), also had an apparently rectangular coffin. Unfortunately, it was not fully excavated and there is no record of material from the grave with which to independently date the burial. Also, since excavation was incomplete, the coffin shape should be considered tentative.

If we tentatively identify tapering coffins as early, it does not follow that graves with six-sided coffins are all later than all of those with tapered coffins. It seems likely that for a number of years both styles would have been in use. Adjacent to the area of the dense stoneware midden there was one intact burial (Burial 384) with a hexagonal coffin, but *no stoneware at all* in the grave shaft. This burial may have pre-dated the midden, since otherwise we would expect at least a few sherds to have found their way into the grave shaft. In the excavated cemetery as a whole, there were 94 burials with hexagonal coffins where no stoneware was recovered. All of these except Burial 384, however, were located far away from the midden (the closest was Burial 351, about 80 feet to the west), and therefore the absence of the waste material cannot be used to place them earlier in time than the dump. The graves with tapered adult coffins that contained stoneware in

their shafts included the burials mentioned above that were located immediately adjacent to the midden and had later intrusions, as well as two that were far from the midden, Burials 404 and 416, both also disturbed by later interments.

Because there are tapering coffins in graves with stoneware, and hexagonal coffins in graves without it, we had to make a decision as to what to use as a temporal diagnostic. We can use *either* coffin shape, *or* the absence of stoneware, *or* a combination of both factors to identify the earliest graves. The preponderance of spatial and stratigraphic evidence supports the general use of four-sided, tapering adult coffins to identify early burials (questionable assignments are indicated in Chapter 6 below). For the analysis in this report hexagonal coffins are placed in the Middle Group or later. Burial 384 probably pre-dated the midden but is still placed in the Middle Group – it is probably among the earliest burials in that cohort, however, and it may in fact be contemporary with adjacent Early Group Burial 361.

In some cases, once the early adult burials were identified, other burials could be grouped with them. Child Burials 121 and 226, for example, were co-interred with Burials 202 and 221 respectively, and therefore have been placed in the early group (see Chapter 6). In other cases stratigraphic relationships point to early burials even where coffin shape is not determinable due to poor preservation.

The absolute dating of the early burial cohort is problematic. There is no firm date for the stylistic change to hexagonal coffins. The general absence of pottery waste may provide a *terminus ante quem* for the burials (a date before which they must have been interred), but as noted above we do not know when dumping began. Assuming that the potteries were in operation by 1728, and that they began dumping their waste on the burial ground shortly thereafter (though this cannot be verified), early-group burials are probably pre-1730 and/or from the very early period of the potteries.

Early burials are located in every area of the site except north of the fence line. It is therefore posited that there was no sequence of use from east to west (or vice versa) within the portion of the African Burial Ground excavated archaeologically. While this project appears to have exposed the latest portion of the historic cemetery, it may not have exposed the earliest area used. There is no way to date the earliest of the early burials excavated, though a general assignment to the early decades of the 18th century is safe, with the understanding that earlier interments certainly may be included. In terms of datable material, only a few sherds of imported ceramics (delft and Chinese porcelain, providing TPQs in the mid-17th century) were found in two of the Early Group burials; the remaining burials contained no datable items other than the local stoneware noted above.

The Middle and Late-Middle Groups

Having identified an early burial cohort on the basis of coffin shape, grave-shaft material, and stratigraphy, and a late cohort on the basis of artifact dating, site location (north of the fence), and stratigraphic/spatial relationships, the majority of burials (259 graves) was

assigned by default to a main, middle temporal group. These burials were then checked for *termini post quem* and analyzed stratigraphically, to pull out possible earlier and later subsets. In the main, an adult burial was assigned to the Late-Middle Group if it overlay others and especially if it truncated another burial. Child burials, more often than not found overlying adults, were considered for inclusion in the Late-Middle Group if they truncated underlying interments, or if they appeared to be associated with later adult burials, or, occasionally, if they were thought to be later based on overall stratigraphy. The stratigraphic series charts were used in assigning relative chronological placements. Isolate Middle Group burials were more difficult to assign, and were placed in the Late-Middle Group only if they appeared to be spatially related to others (for example were aligned adjacent and parallel) or had artifacts with beginning manufacture dates later than circa 1760. There are 60 graves that have been assigned to the Late-Middle Group.

It is emphasized that the Middle and Late-Middle cohorts of burials are, as groups, more strictly relative than are the early and late cohorts. There may be much overlap between the Middle and Late-Middle Groups in the dates of individual interments. Likewise, Late-Middle Group burials may overlap in time with the Late Group. Though some variables, such as orientation, and some artifact distributions show a distinction or perhaps a trend occurring between the two groupings, none is strong enough to be used as a temporal indicator.

For some purposes, the Middle Group can be seen as the "main" group rather than as a chronological cohort. Since it is presumed to include the broadest temporal span of interments (with early and late graves included inadvertently in the absence of temporal evidence) it can serve as a proxy "median" or "average" sample in terms of demography and material culture distribution. Thus, deviations from this average can be discerned and examined.